CTC Laboratories, Inc.

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Certificate #4340.01

TEST REPORT

Report No. .....:	**CTC20230973E12**
Applicant .....:	**Lumi United Technology Co., Ltd**
Address.....:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China
Manufacturer.....:	Lumi United Technology Co., Ltd
Address.....:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China
Product Name .....:	**Water Leak Sensor T1**
Trade Mark .....:	Aqara
Model/Type reference.....:	WLS-S01
Listed Model(s) .....:	SJCGQ12LM, SJCGQ12LM-G0, WL-S02D
Standard .....:	**AS/NZS 2772.2: 2016 + Amd 1: 2018**
Date of receipt of test sample…:	Apr. 16, 2019
Date of testing……..:	Apr. 17, 2019 ~ Apr. 27, 2019 and Apr. 22, 2023 ~ Apr. 28, 2023
Date of issue……..:	May. 05, 2023
Result……:	**PASS**

Compiled by: (Printed name+signature)	Terry Su	Terry Su
Supervised by: (Printed name+signature)	Eric Zhang	Eric Zhang
Approved by: (Printed name+signature)	Totti Zhao	Totti Zhao

Testing Laboratory Name .....:	**CTC Laboratories, Inc.**
Address.....:	2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

AS/NZS 2772.2: 2016 + Amd 1: 2018 – Radiofrequency fields, Part 2: Principles and methods of measurement and computation - 3 kHz to 300 GHz

1.2. Report version

Revised No.	Date of issue	Description
01	May. 05, 2023	Original

1.3. Test Facility

CTC Laboratories, Inc.

Add: 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Indus try Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (F CC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Lumi United Technology Co., Ltd
Address:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China
Manufacturer:	Lumi United Technology Co., Ltd
Address:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

2.2. General Description of EUT

Product Name:	Water Leak Sensor T1
Trade Mark:	Aqara
Model/Type reference:	WLS-S01
Listed Model(s):	SJCGQ12LM, SJCGQ12LM-G0, WL-S02D
Model Difference:	All these models are identical in the same PCB, layout and electrical circuit, only named differently for marketing purpose.
Power supply:	3Vdc from button battery
Hardware version:	V1.0.1
Software version:	V1.0.1
Technical index for Zigbee	
Modulation:	O-QPSK
Operation frequency:	2405-2480MHz
Antenna type:	PCB Antenna
Antenna gain:	2dBi

3. TEST ITEM AND RESULTS

3.1. RF Exposure

Limit

AS/NZS 2772.2: 2016 + Amd 1: 2018 APPENDIX E3.2

Exposure category	Frequency range	E-field strength (V/m rms)	H-field strength (A/m rms)	Equivalent plane wave power flux density S_{eq} (W/m^2)
Occupational	100 kHz – 1 MHz	614	$1.63/f$	—
	1 MHz – 10 MHz	$614/f$	$1.63/f$	$1000/f^2$ (see note 5)
	10 MHz – 400 MHz	61.4	0.163	10 (see note 5)
	400 MHz – 2 GHz	$3.07 \times f^{0.5}$	$0.00814 \times f^{0.5}$	$f/40$
	2 GHz – 300 GHz	137	0.364	50
General public	100 kHz – 150 kHz	86.8	4.86	—
	150 kHz – 1 MHz	86.8	$0.729/f$	—
	1 MHz – 10 MHz	$86.8/f^{0.5}$	$0.729/f$	—
	10 MHz – 400 MHz	27.4	0.0729	2 (see note 6)
	400 MHz – 2 GHz	$1.37 \times f^{0.5}$	$0.00364 \times f^{0.5}$	$f/200$
	2 GHz – 300 GHz	61.4	0.163	10

MPE Calculation Method

$$S = \frac{PG}{4\pi d^2}$$

Where:
S = power flux density, in watts per square meters
P = power transmitted, in watts
G= antenna gain
d = distance from antenna, in meters
π：3.1416

Test Results

Frequency (MHz)	Antenna Gain (dBi)	Maximum Power EIRP(dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	d (m)	power flux density (W/m2)	Limit (W/m2) @ power flux density
2405	2	11.67	11±1	12	0.2	0.005	10
2440	2	11.70	11±1	12	0.2	0.005	10
2480	2	11.48	11±1	12	0.2	0.005	10

Note
For a more detailed features description, please refer to the RF Test Report.

**************************THE END**************************